Linear Algebra and its Applications 434 (2011) 2223–2224

Contents lists available at ScienceDirect

Linear Algebra and its Applications

journal homepage: www.elsevier.com/locate/laa

Preface

The Second International Conference on Numerical Algebra and Scientific Computing (NASC 2008) was held in Nanjing, November 2–5, 2008. More than 140 participants from Canada, China, Germany, Japan, Russia, Spain, Sweden, Switzerland, UK, USA, and other countries, attended the conference. This issue of the journal Linear Algebra and its Applications contains carefully selected and refereed papers by participants of the conference.

The conference was co-organized by the Chinese Academy of Sciences and Nanjing Normal University, and chaired by Iain S. Duff, Rutherford Appleton Laboratory, UK, and Zhong-Ci Shi, Chinese Academy of Sciences, Beijing. The organizing committee consisted of Zhong-Zhi Bai from the Chinese Academy of Sciences, Beijing; Hua Dai from Nanjing University of Aeronautics and Astronautics, Nanjing; and Jin-Ru Chen, Qi-Kui Du, Yong-Zhong Song, Wen-Yu Sun and Li Wang all from Nanjing Normal University, Nanjing.

It was the purpose of the conference to gather experts in numerical algebra and scientific computing from all over the world to present state-of-the-art research results, exchange new ideas, discuss future developments, as well as to enhance academic communications and connections among them. The talks display current activity in these areas and illustrate the diversity of the ongoing research. The topics discussed include direct and iterative methods for large systems of linear equations, iterative methods for large systems of nonlinear equations, Krylov subspace methods for least-squares problems, structured matrix computations, multigrid methods, preconditioning, linear and nonlinear eigenvalue problems, nonlinear inverse problems, algebraic Riccati equations, perturbation analysis, tensor computations, variational and complementarity problems, as well as parallel computing. Applications to computational fluid dynamics, PDE-constrained optimization, control theory, coordinate metrology, image restoration, thermal conduction, biomedical engineering, analysis in human bone structures, shape-optimizing graph partitioning, and obstacle problems were presented.

We are happy to have been able to secure manuscripts at the leading edge of research on numerical algebra and scientific computing from some of the speakers at the conference, and we hope that readers of this issue will enjoy the contributions as much as we have.

Finally, we would like to take this opportunity to thank the sponsors of the conference: National Natural Science Foundation of China; Nanjing Normal University; State Key Laboratory of Scientific/Engineering Computing; Chinese Mathematical Society; Academy of Mathematics and Systems Science, Chinese Academy of Sciences; Nanjing University of Aeronautics and Astronautics; and the High-Performance Scientific Computation Research Project. Our special thanks go to Dr. Xi Yang from the Chinese Academy of Sciences, and Xin Chen, Ying Gu, Yan Han, Yun-Qing Shen, Juan Song, An-You Zhu and the other students and faculty from Nanjing Normal University, for their enthusiasm and help with the organization of the conference.

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0024-3795/$ - see front matter
doi:10.1016/j.laa.2010.11.028

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